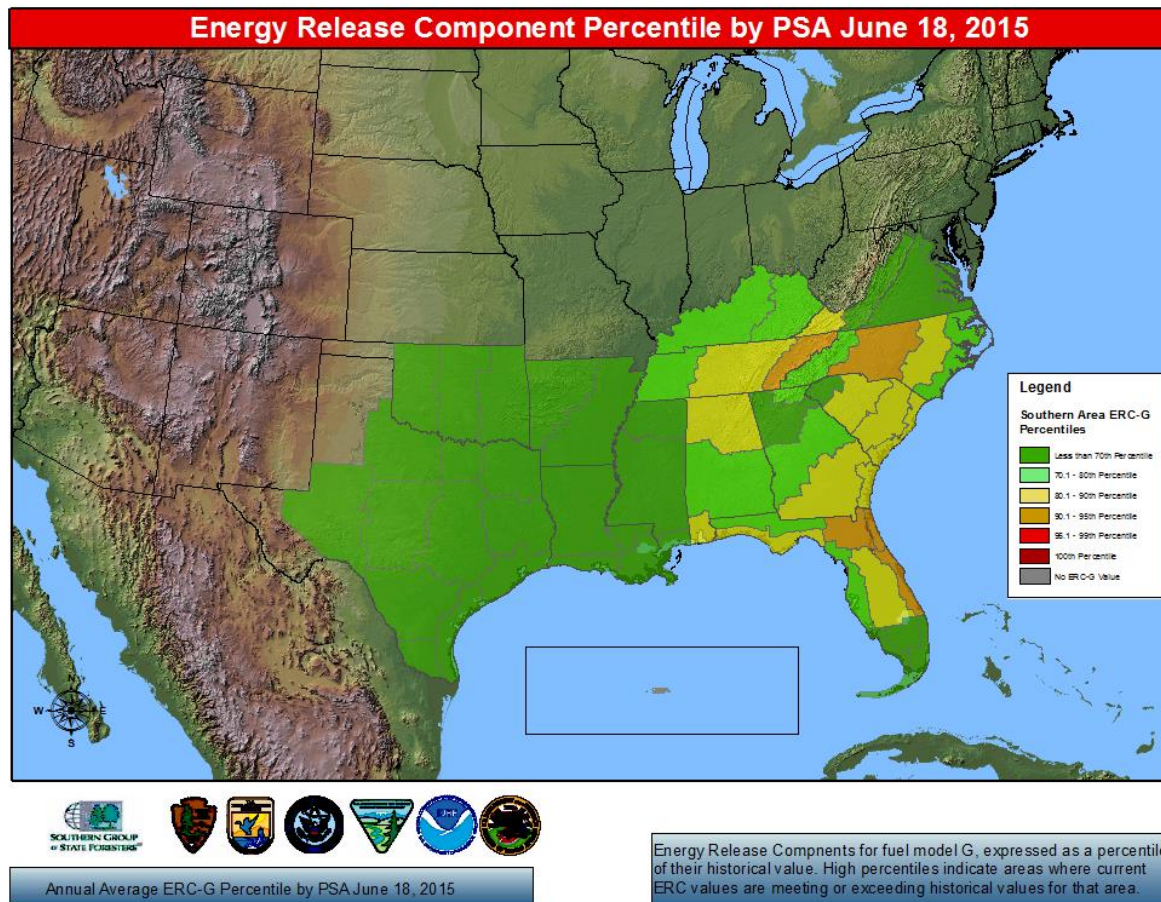


Southern Area Fire Risk Assessment

Summer 2015



**Southern Area Coordination Center
Rapid Assessment Team**

Contents

| Section | Page |
|------------------------------------------------|------|
| Executive Summary | 3 |
| Introduction & Background | 4 |
| Current Observations by Fire Managers. | 5 |
| Fire Analysis | 8 |
| Weather | 8 |
| Fuels and Fire Danger Conditions | 12 |
| Seasonal Outlook | 18 |
| Predicted Fire Behavior | 19 |
| Fire Occurrence | 23 |
| Summary | 25 |
| Conclusions | 26 |
| Recommendations | 27 |

Executive Summary

In response to a deepening drought over the southeastern extreme of the Southern Area, a Fire Risk Analysis was conducted to assess the potential and expected fire situation for the summer fire season. The assessment period extends from June 21 to July 31, 2015 and covers the piedmont of the Carolinas and Georgia, east to the Atlantic coast and northeast Florida. The analysis included a look at the current weather situation and extended forecast, fuels compared to normal for the time of year, National Fire Danger Rating System's energy release component for each Southern Area Predictive Service Area, and fire occurrence. Recommendations are provided based on the findings and conclusions of the analysis.

The portion of the region in this analysis is near the end of their normal fire season. However, a short term drought pattern has developed and is forecasted to continue for the upcoming months. This dry pattern has led to a slight increase in wildfire activity and severity. In response to the dry conditions and its impact on the fire risk potential within the Southern Area, a fire risk analysis was conducted to:

- Assist state and federal wildfire agencies in preparing for a prolonged fire season
- Anticipate the severity of the season
- Assist state and federal wildfire agencies with severity requests for emergency fire funding
- Inform FEMA of the Southern fire potential in order to assist in obtaining financial assistance

Based on current fuel conditions and forecasted weather conditions, the most likely scenario is an above average level of wildfire activity for the next month or beyond. This level of activity will likely cause some slight increase in firefighting resources being mobilized within a state. There is also a high probability the Southern Area will see higher than normal mobilization across state boundaries for this time of the year.

The analysis and findings indicate the following probabilities for the summer fire season for the eastern coastal plains.

| Scenario Description for the June 21 through July 31, 2015 period | Southern Area Probability |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Most Likely Case Dry pattern continues but with periodic rains Fire activity is above normal but only requires some additional resources with the occasional type III fire. | 70 |
| Best Case Wet pattern begins--Minimal fire activity | 20 |
| Worst case Periodic rains stop and above normal fire activity spreads to the southern Appalachian and continues through the summer. | 10 |

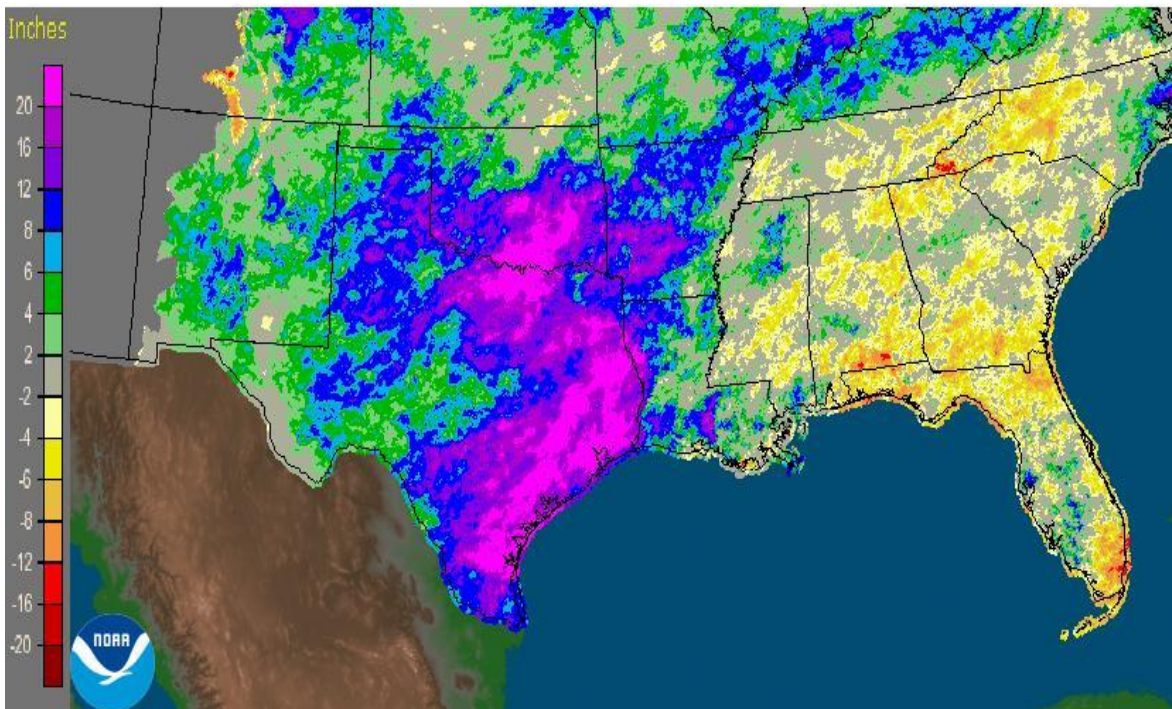
Recommendations

- Maintain capabilities to mobilize type III teams
- Augmentation of initial attack resources will likely be required over the next few weeks. This will be due to increased wildfire occurrence and longer mop up times due to organic soils becoming involved.
- Additional aviation assets may be needed.
- Managers will want to carefully balance supporting suppression efforts out west and initial attack on home the unit.

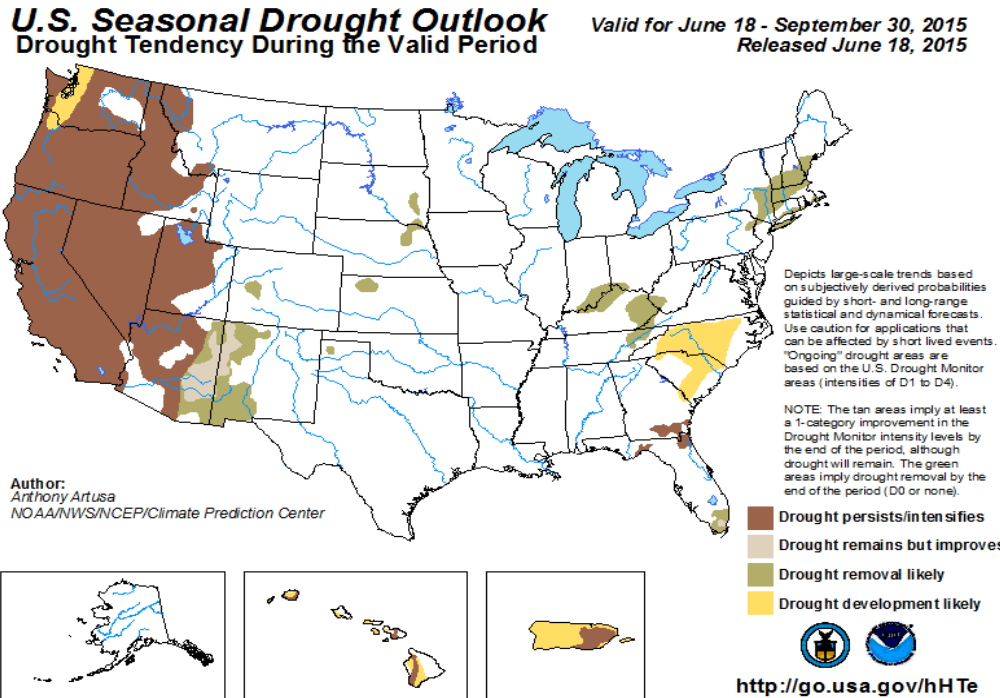
Introduction & Background

The Southern Area has experienced a very high frequency of rain events for much of the calendar year. As a result, fire occurrence and prescribed burn accomplishments have generally been below normal. However, there has been a building of rainfall deficits on the east side of the Southern Area while much of the west side has experienced record flooding. This is illustrated on the precipitation map for the year (below). Much of Texas and Oklahoma is 12 to 20 inches above normal for the year. Conversely, much of the region east of the Mississippi river, is 2 to 8 inches below normal for the year.

NWS Southern Region: Current Year to Date Departure from Normal Precipitation
Valid at 6/20/2015 1200 UTC- Created 6/20/15 14:29 UTC



A high pressure ridge centered over the east coast is the cause of much of the weather dominating the Southern Area for the last several weeks. This pattern is bringing dry, hot weather to the east side of the region and is expected to continue for several weeks. These conditions will quickly dry out vegetation and increase fire danger. This indicates a likelihood of above normal fire activity for this time of the year.



The U.S. Seasonal Drought Outlook (above) illustrates very little drought across much of the Southern Area except for extreme northeast Florida and southeastern Georgia. However, the outlook does indicate drought development is likely across much of North Carolina and South Carolina. Elevated National Fire Danger Rating System (NFDRS) indices have been noted in this area.

The net result of all this is an increase in the fire risk potential and the amount and type of firefighting resources needed to respond to the situation. This certainly does not appear like an extreme wildfire event. This appears to be an elevated time of activity when fire managers would expect the fire situation to be slowing down.

Current Summarized Observations by Fire Managers

Paul Churchill, District FMO, Francis Marion NF, South Carolina:

Conditions are there and ready to burn. Weather and fire danger conditions are right at the thresholds. Under current conditions resources should be able to contain fires within a burn period however if RHs drop below 30 and/or winds gust over 20 then fires will have the potential to get big fast.

Darryl Jones, Forest Protection Chief, South Carolina Forestry Commission:

In SC, we have been lucky to have pretty low levels of ignitions lately, but the fires we are having are exhibiting aggressive behavior. We have seen an increase in lightning caused fires, and our field crews are seeing higher flame lengths and some burning into the duff layer and peat. We

have multiple holdover fires in heavy fuels (logging slash, edges of bays, and in some areas with deep duff) that we have been returning to daily to dig out and spray hot spots down in the duff. Most of the activity so far is in the coastal plain, and we have several big Carolina bays that are dry. If the drier pattern continues, we do expect more control issues.

Pete Myers, District FMO, Osceola NF, FL:

The indices and fire behavior are matching those experienced in 2011. The biggest difference in 2015 is that the spring was much wetter. In 2011 we were experiencing drought moving into this time of year so there was much less water in the ground and fires were burning deeper. There isn't any surface water currently and what water is in the ground is drying fast.

Jim Brenner, Fire Management Administrator, Florida Forest Service:

Wildfire Activity in Florida can occur any time of the year. However, the peak months are March through Mid-June. By Mid-June on the whole (with a few exceptions over the past 30 years e.g., 1981, 1998) the monsoonal flow has set up and peak wildfire activity has abated.

So far 2015 does not seem to differ from other years, with the exception that during the past week the tropical cyclone that went into Texas (TS Bill) sucked all of the SE moisture with it. That, along with the high pressure sitting over us has increased temps and put something of a damper on t-storm activity.

The situation is driest in the area north of Gainesville toward Lake City and East to Jacksonville, although the area around Tallahassee is also in need of some moisture. The peninsula has been steadily improving over the past few weeks, which is what we would normally expect.

With the El Nino in play in the central pacific, this generally reduces tropical activity in the Atlantic so we do not expect to see too many tropical storms coming our way.

Frank Sorrells, Chief of Forest Protection, Georgia Forestry Commission:

Over all and widespread rainfall had diminished over the last 3 weeks especially in the Piedmont and Southern half of Georgia. Local thunderstorms have brought some heavy rainfall amounts in isolated areas. As typical, these TS are usually short lived and move very little. Lightning activity has increased, as you would expect, and new multiple fire starts are occurring daily. Most of the wildfires are burning with moderate rates of spread plus torching and short range spotting occurring. Most of the wetland areas, swamps and lowland hardwood bays are drying quickly with fires burning intensely especially along the margins with upland pine stands. The palmetto gallberry, southern rough fuels and timber litter fuels in pine plantations in the SE parts of Georgia are burning intensely in the afternoons with flame lengths of 20ft common. Almost all wildfires are holding over for several days and are requiring more intense mop-up especially in the last week. We expect this fire behavior conditions to continue and more than likely intensify for the next month.

Cabe Speary, Fire Environment Program Head, NC Forest Service:

Overall, low fire activity. Rainfall has been spotty but scattered enough to limit the areas of concern. No evidence of long term mop up or smoldering issues in the organics. However, the southern and eastern piedmont is well below normal rainfall and is at or near critical NFDRS indices. A wildfire on the Outer Banks was burning very actively in the salt cedar and scrub oak on sandy soil at midnight with 90% RH and 30 mph winds.

The pictures below are of a prescribed burn in Pender County, NC on 6/18. Temperatures in the low 90s with RHs in the 50%-60% range. They had good consumption on about 60% of the block.



Below are some photos from the edge of a prescribed burn in Tyrrell County, NC on 6/16. Pretty thick stand of mature loblolly with a moderate hardwood understory. RHs that day were unusually low, about 35-40% by mid-afternoon. Temperatures were in the upper 90s to near 100.



Fire Analysis for the Southern Area for the Period June 20 to July 31, 2015

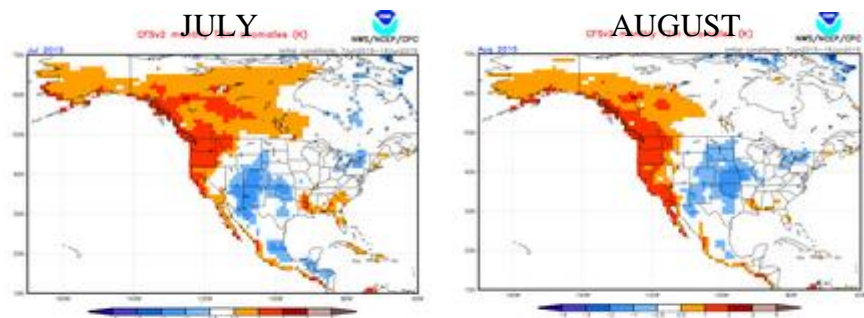
The primary components of weather, fuels, fire behavior, and fire occurrence were analyzed to assess the fire risk potential within the Southern Area.

WEATHER SITUATION AND OUTLOOK

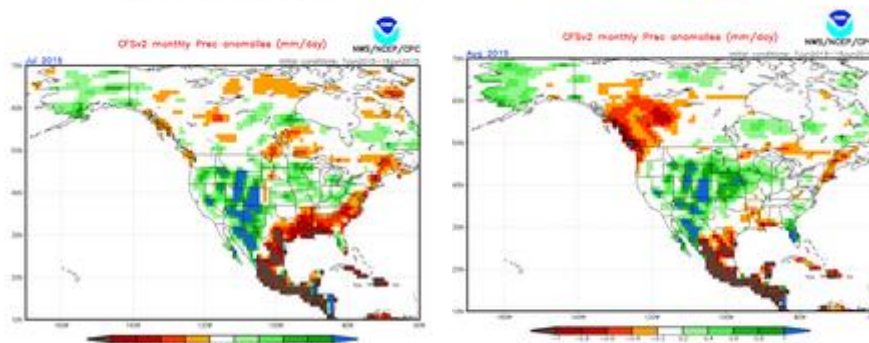
1. The Central Gulf and Southeast States (Trending Warmer/Drier than Average though Summer).

Typical of this particular year's El Nino episode, precipitation patterns covering the late Spring and what should be perhaps the first half of the Summer period show conditions trending warmer and drier than average. US Climate modeling (the CFSv2 monthly anomaly forecasts) have changed in recent weeks to reflect this evolving drier southeast pattern and now similarly match patterns revealed in analogs of similar historical ocean-atmosphere conditions (see Jul and Aug outlook maps below).

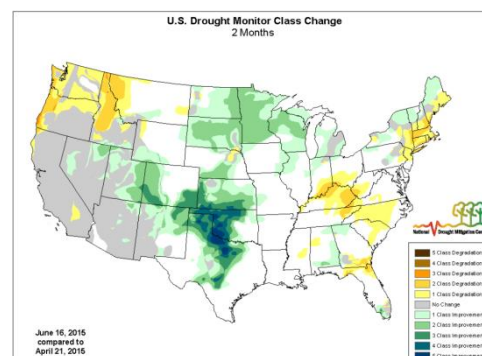
Temperature
Anomaly
Forecast



Precipitation
Anomaly
Forecast



There will be amplified episodes of rain (thunderstorms) activity (one coming around every week) – it is just that amounts will fall short of the “average.” It is expected that soil moistures, stream flow/levels and other parameters indicative of fire potential will subsequently continue to decrease creating a fine fuel fire environment more receptive to ignition (especially lightning). Thunderstorm



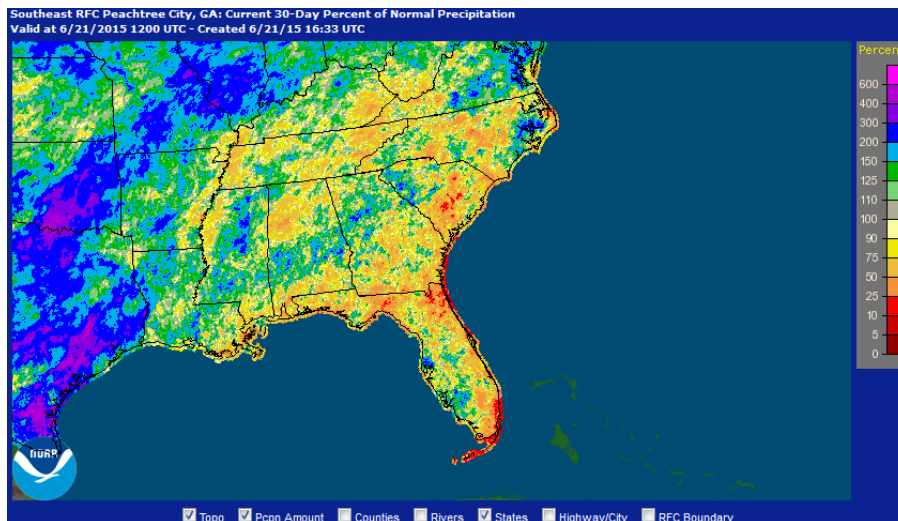
activity will ultimately produce a mosaic pattern of “wetter” and “drier” fuels and areas of highest fire potential. Fire potential in swamp type environments (especially Okefenokee) will likely see potential move toward interior areas as water levels decrease. The significant change from the Winter and early Spring “very wet” (frequency and amounts) situation earlier this year to the now drier/drying condition is reflected in the 8 week drought change map above.

2. Texas-Oklahoma (A “Wetter” and “Cooler” Trending Pattern is Expected to Persist).

As already mentioned, the current El Nino episode is expected to continue to produce a wetter and cooler than average trending weather pattern for the Southern Plains and Texas. The potential threat for additional moisture from tropical waves from both the eastern Pacific and Gulf of Mexico to be brought into the area further adds to the likelihood for a persisting wetter/ below average wildfire threat.

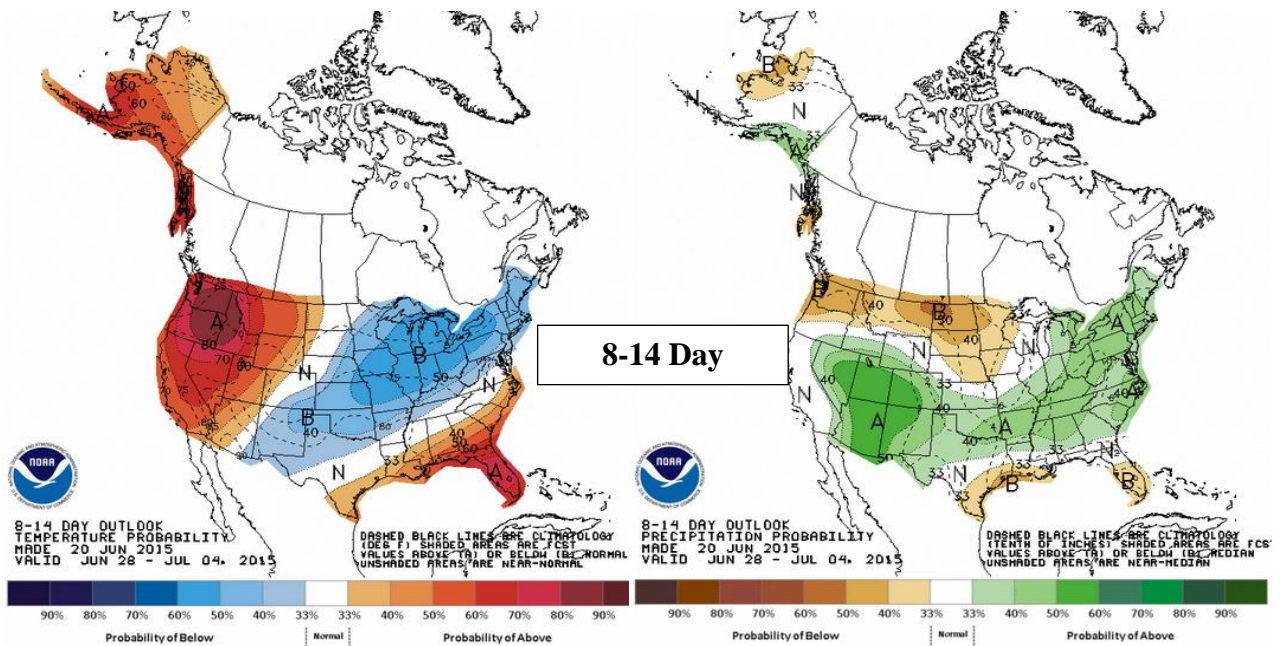
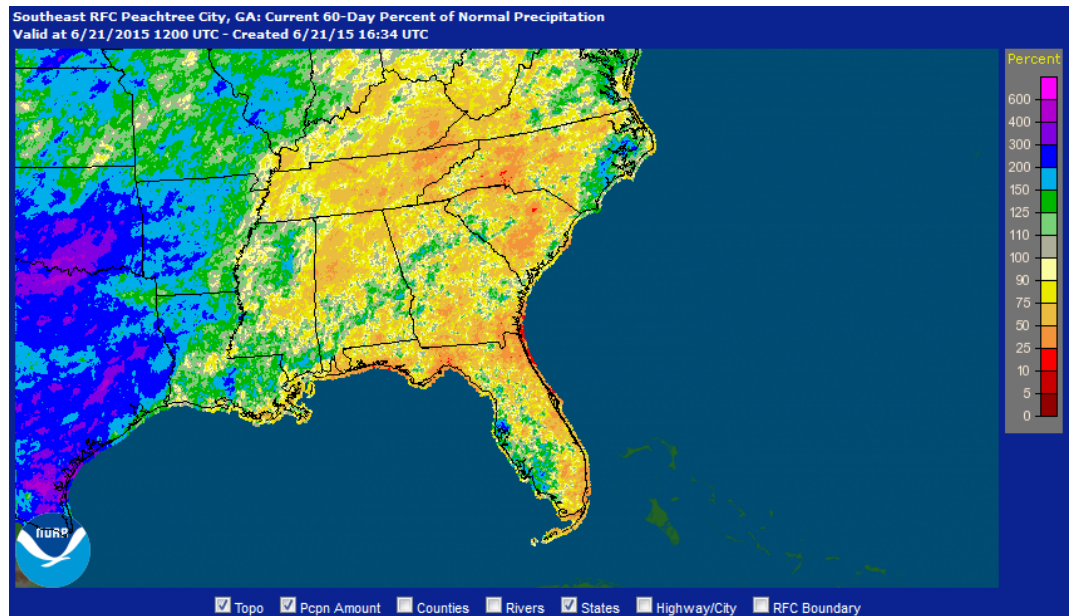
3. 2015 Atlantic Tropical Season (Below Average Season Expected).

Predictions from a number of both governmental and private worldwide weather offices show broad consensus for a below average season in terms of both “named” storm numbers (generally ranging from 7 to 12) and total number of aggregate storm days. In addition, US landfall risks for a major hurricane (Category 3, 4, or 5) as forecast by Dr. Klotzbach of Colorado State University’s Tropical Storm Project, are also generally half of the 30 year average. While development of Cape Verde and “long tracking” storms are much less likely this season, the pattern and threat for “closer in” storm genesis and development will be greater. Development threat appears greatest over the area closer to the US – from the Gulf Stream waters along the US East Coast to the Bahamas/Caribbean, to the Gulf of Mexico.

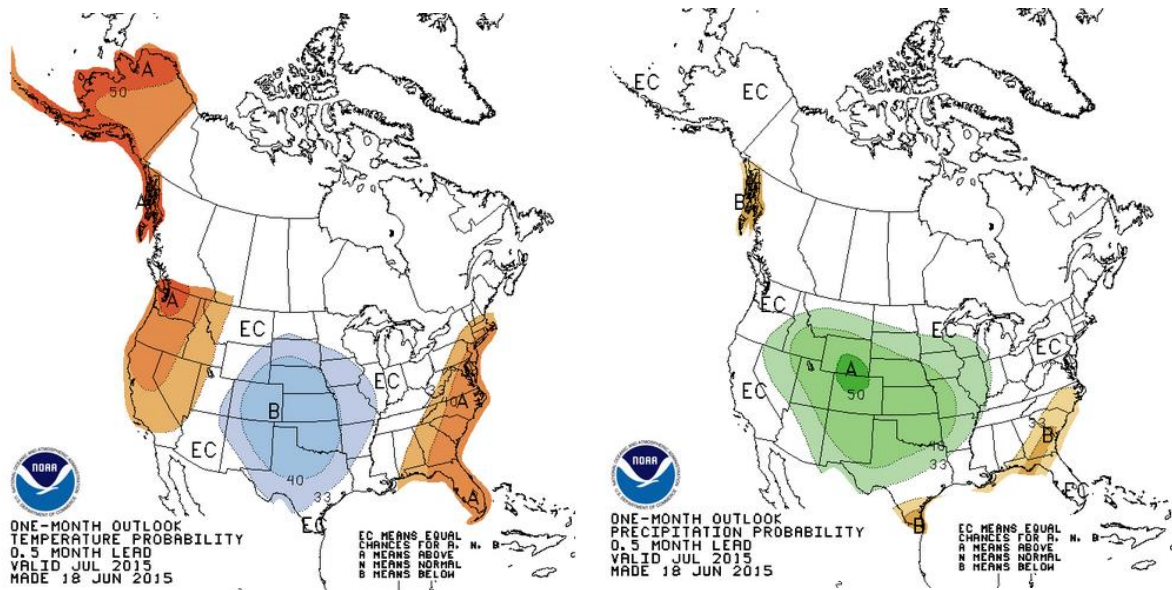


The 30-day image to the left shows a significant departure from normal precipitation since mid-May. Much of the Coastal Plain has received less than 50% of normal rainfall over the period while areas in the interior of South Carolina as well as coastal Georgia and Florida are hovering below 25% of normal.

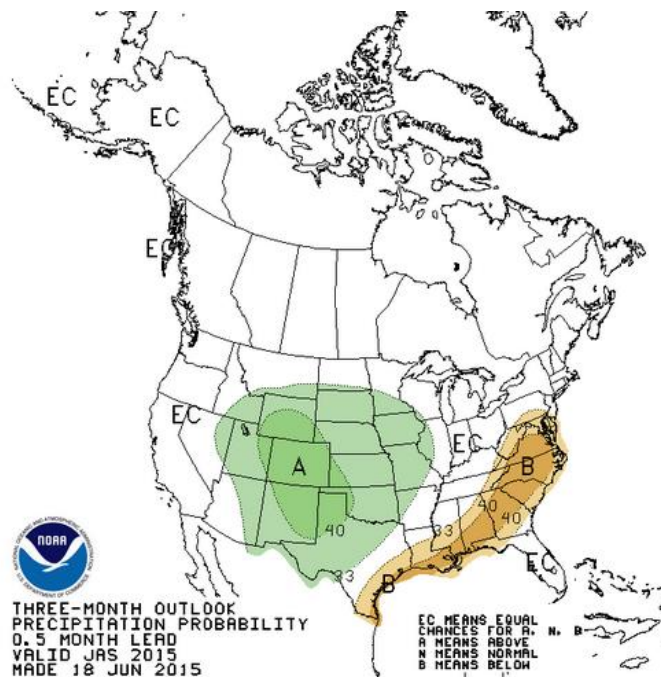
The 60-day image to the right shows a majority of the analysis area near or below 50% of normal precipitation for the period ending June 21, 2015.



The 8 to 14 day precipitation and temperature probability maps above, from the Climate Prediction Center, indicates a significant chance of above normal temperatures and a slight trending to normal or above normal precipitation extending from Virginia and to the south into southern Georgia. Below normal precipitation is forecast for Florida and the gulf coasts of Louisiana and Texas.



The one-month precipitation and temperature probability outlooks both highlight the potential for warmer and drier conditions continuing through mid-July. The three-month precipitation outlook below highlights the potential for continued drier than normal conditions into the late summer and early fall.

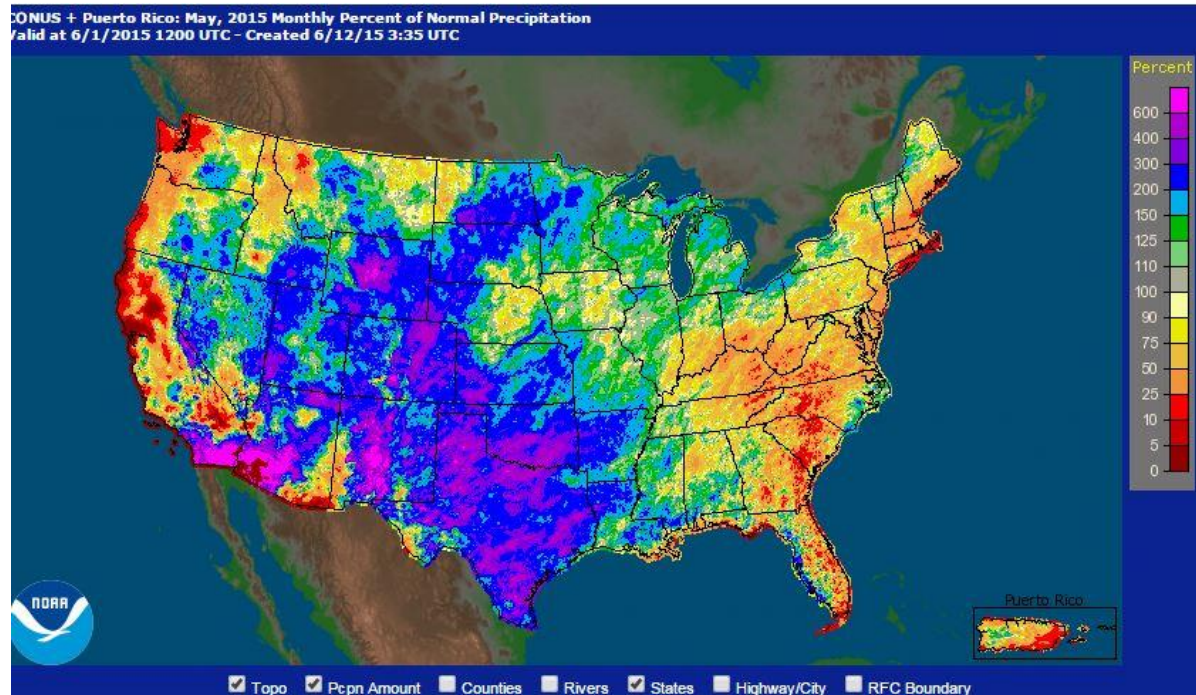


There is some conflict between the short term (8 to 14 day) and long term forecasts. Short term forecasts for the last month have consistently called for above norm temperatures however precipitation probability outlooks have trended to slightly below normal precipitation along the northern Coastal Plain over the past two days. However, the long range still indicates below average precipitation. This would seem to indicate the potential for a change in the amount of precipitation the region can expect from each frontal passage.

Fuel and Fire Danger conditions

Recent drying trends along with elevated temperatures and low relative humidity have been in place over the assessment area for the past 3-4 weeks. The affected area is from the Piedmont in North Carolina along the eastern seaboard extending through Florida. The drought monitor map shows a seasonal long-term drought beginning to form over the assessment area. Long term trends over the next 30-60 days show little improvement in the form of rainfall and temperatures. This drought has affected fuel moistures, dead fuel moistures are currently running at or near historical lows for this time of year across the assessment area. These fuels have become a receptor for wildfire initiation from lightning which increases in frequency during the summer months.

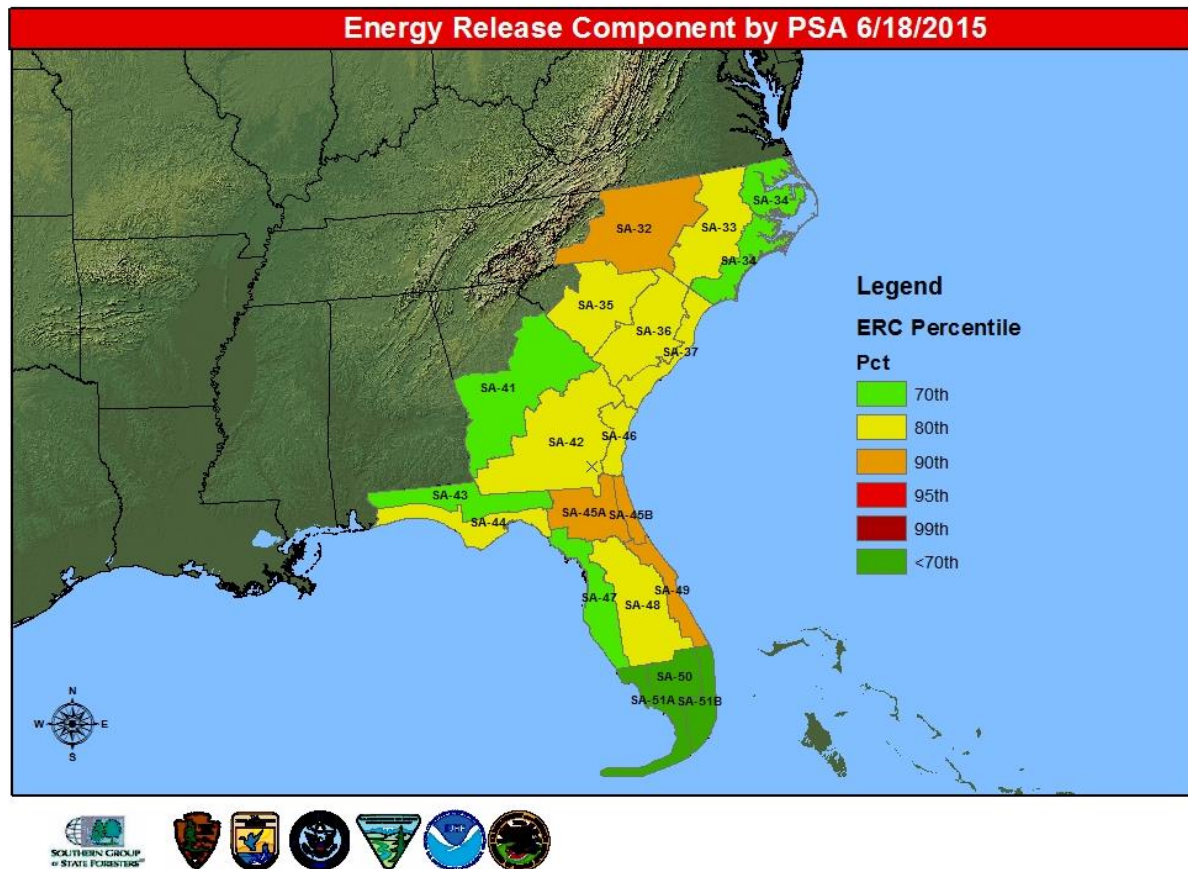
In very general terms, extreme fire behavior can exist when two conditions are present. One of those conditions is the long term drying of fuels. The second is daily fire weather conditions (low humidity, high temperatures, and high winds), which can lead to large fire growth. This second condition is likely to develop on a regular basis based on the forecasted weather for the next few months. Also, due to the long term drying of fuels, critical fire weather thresholds which are normally used may be reached at more benign weather conditions. In other words, under normal fuel moisture conditions, firefighters might see elements of extreme fire behavior when humidity values drop below 30%. However, due to the long term drying of fuels extreme fire behavior may begin at humidity values of 35 to 40%.



The map above demonstrates the short term moisture deficit for the month of June. Most of the locations in the assessment area are 5 to 50% of normal rainfall for this month.

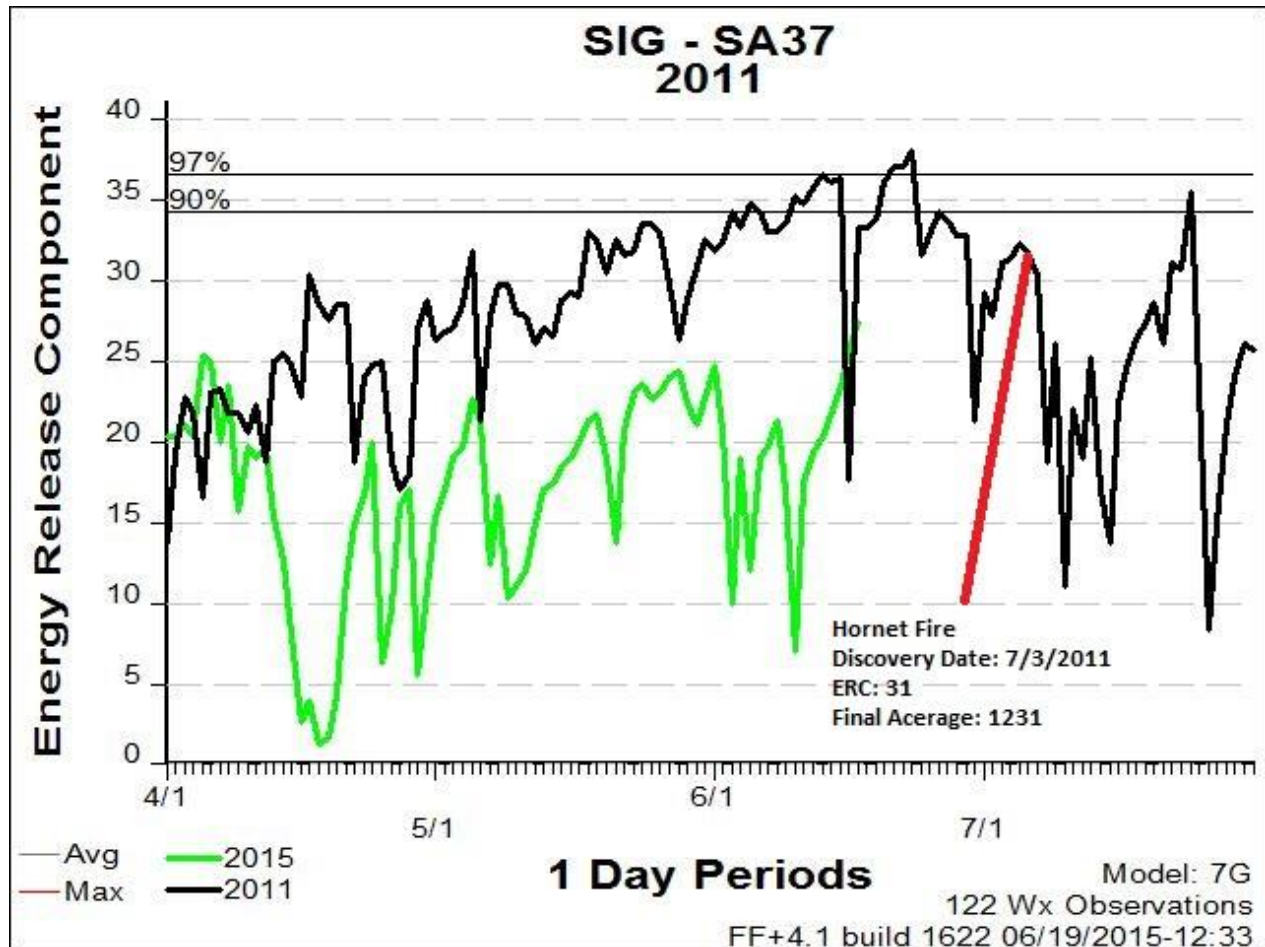
Energy Release Component (ERC) provides an index that is correlated with flammability of fuel and difficulty of suppression. ERC is often referred to as an indicator of fuel dryness. This index seems to be most useful for characterizing the seasonal severity of the fire season across the Southern Area. ERC for each Southern Area Predictive Service Area (PSA) can be calculated based on weather measurements taken at Remote Automatic Weather Stations (RAWS). The areas covered by the assessment are colored on the map below.

The percentile ERC calculated for each PSA on at the time of the assessment is shown in the image below.

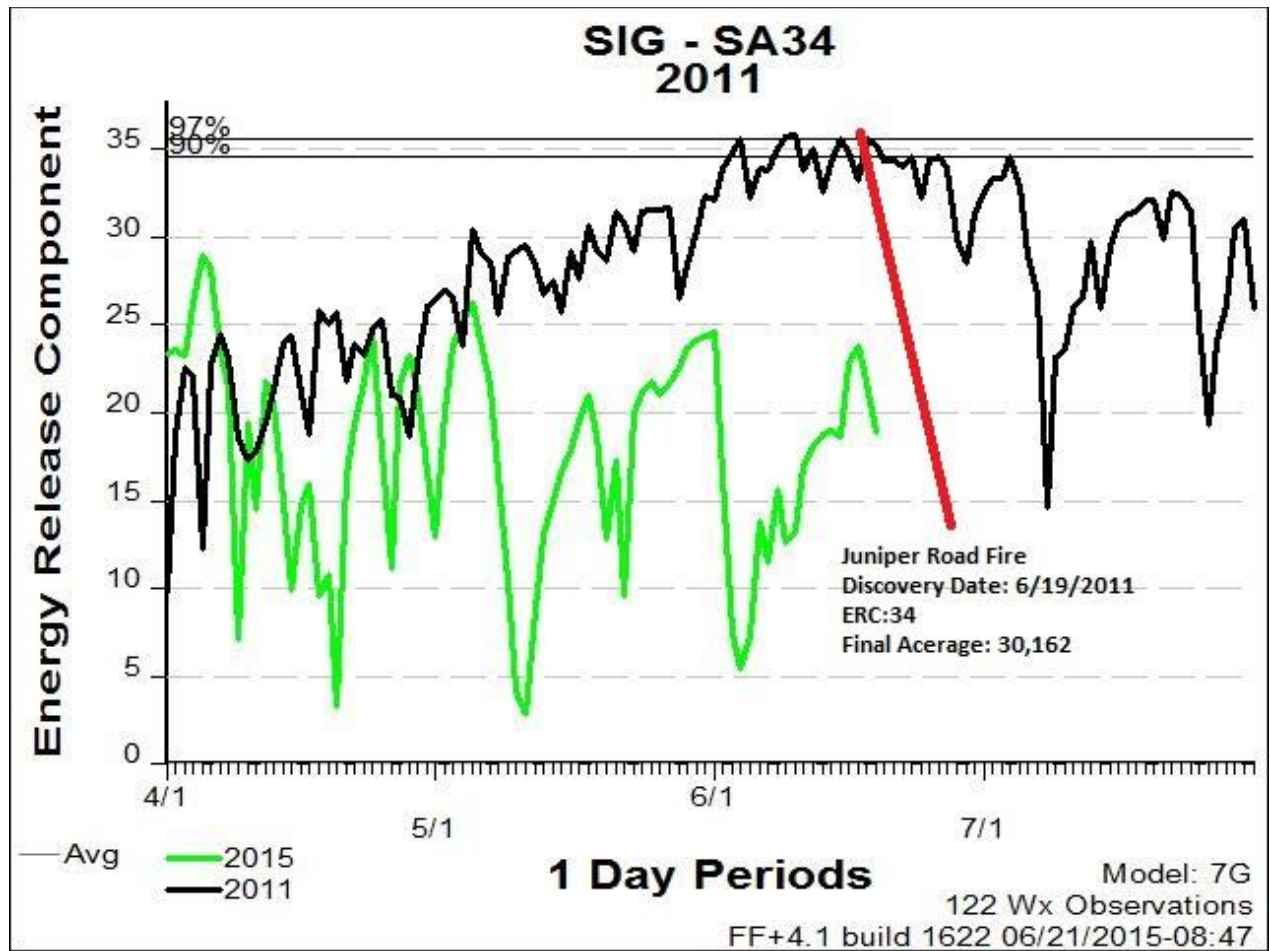


The upper portions of the ERC percentile range were more finely divided to differentiate PSAs which were all in high fire danger. It is important to note above the 90th percentile is considered critical and represents fire danger that is only experienced less than 10% of the time. Also, any ERC value that is close to the 97th percentile is most close to the record high ERC value. This means those areas are at record high fire danger values for that time of the year. The areas highlighted above the 90th percentile represent the most critical areas currently. However, based on forecasted weather patterns it is expected more areas of the region will become critical. The area of the region will likely see more ERC values reach record high levels over the next 7 to 10 days unless rainfall is received.

Listed on the following pages are examples from some of the most critical areas across the region of Energy Release Component, Relative Humidity and Fine Fuel Moistures. ERC graphs shown below have the 2011 and 2015 ERC's these 2 years have the best NDFRS correlation over the past 10 years. 2011 was the also the last year the region experienced multiple large long duration project fires. Although current ERC indices across the PSA assessment area aren't critical, should the predicted weather pattern hold, with no substantial precipitation expected, indices should be expected to trend near or above 90th percentile values within the next week.

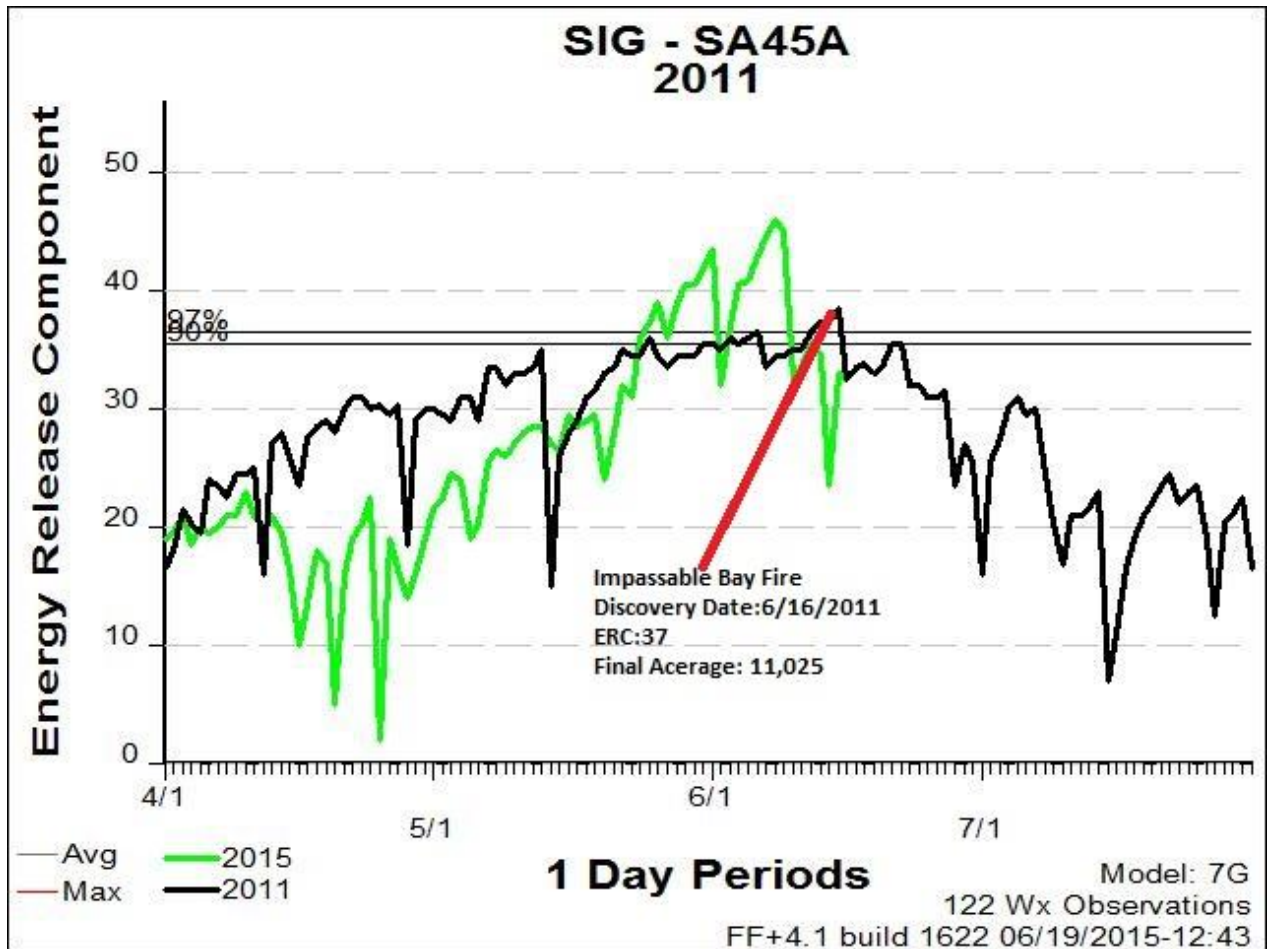


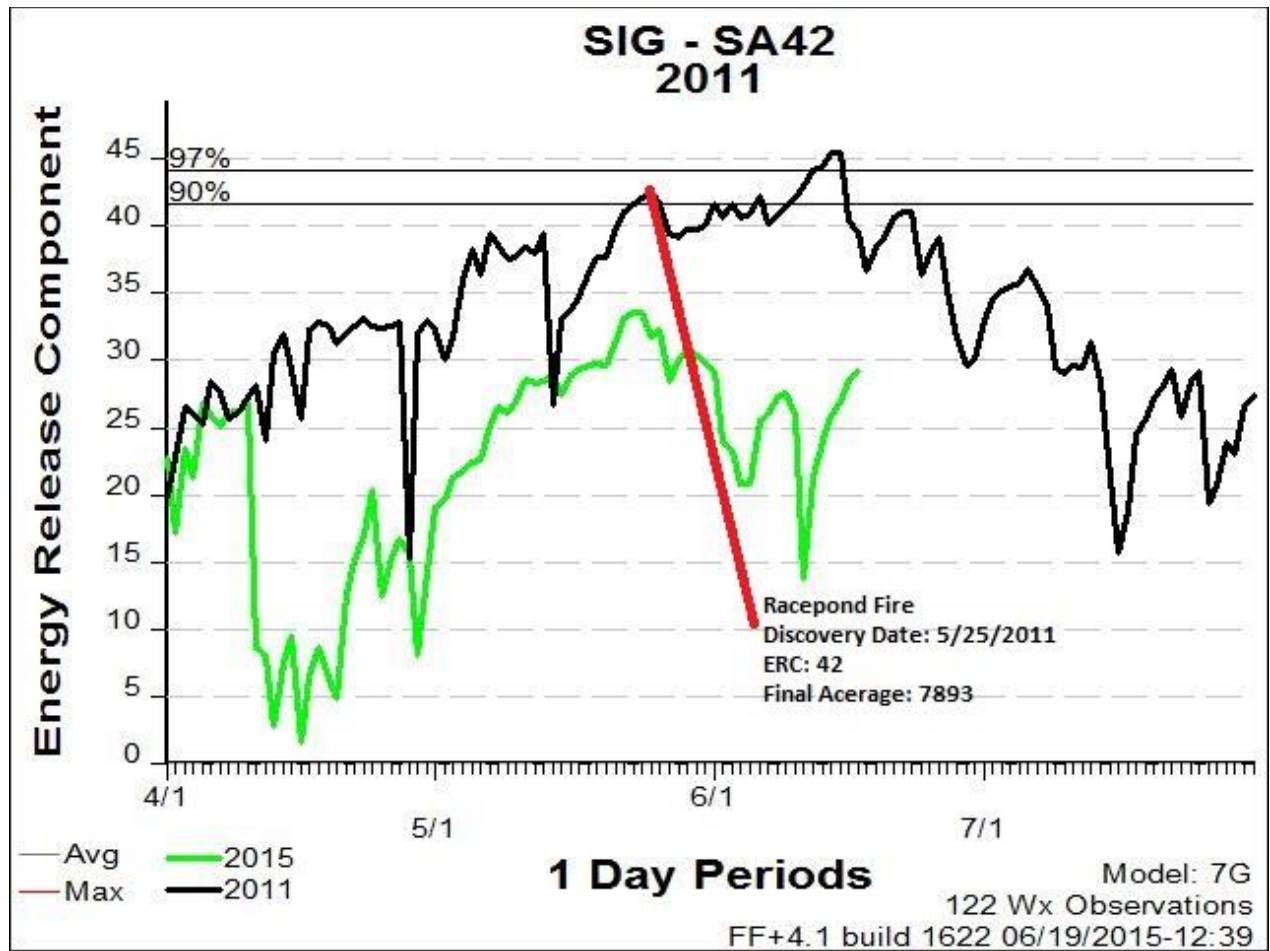
South Carolina Coast



North Carolina Coast

Northeast Florida and Coastal Florida

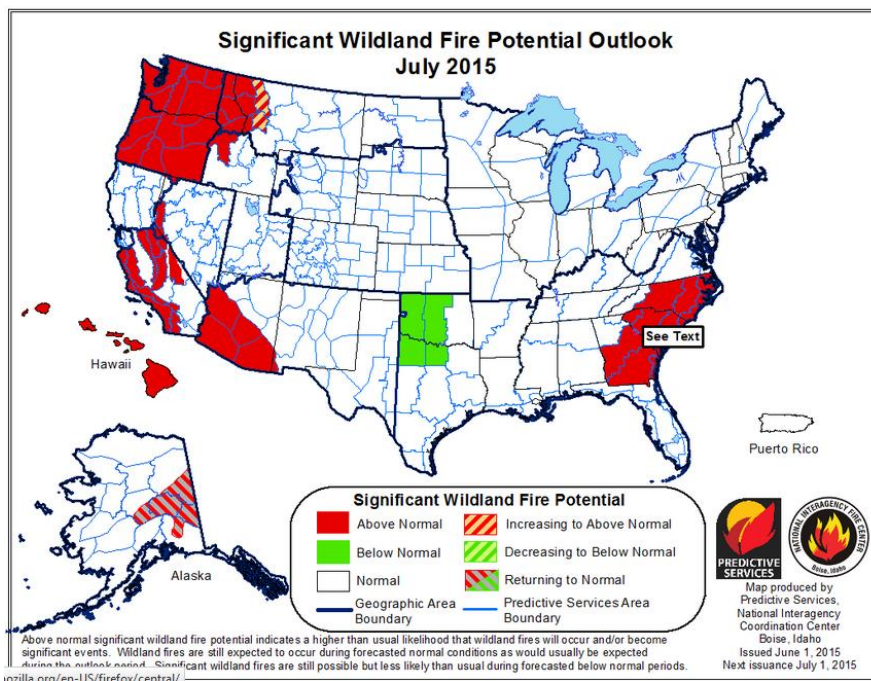
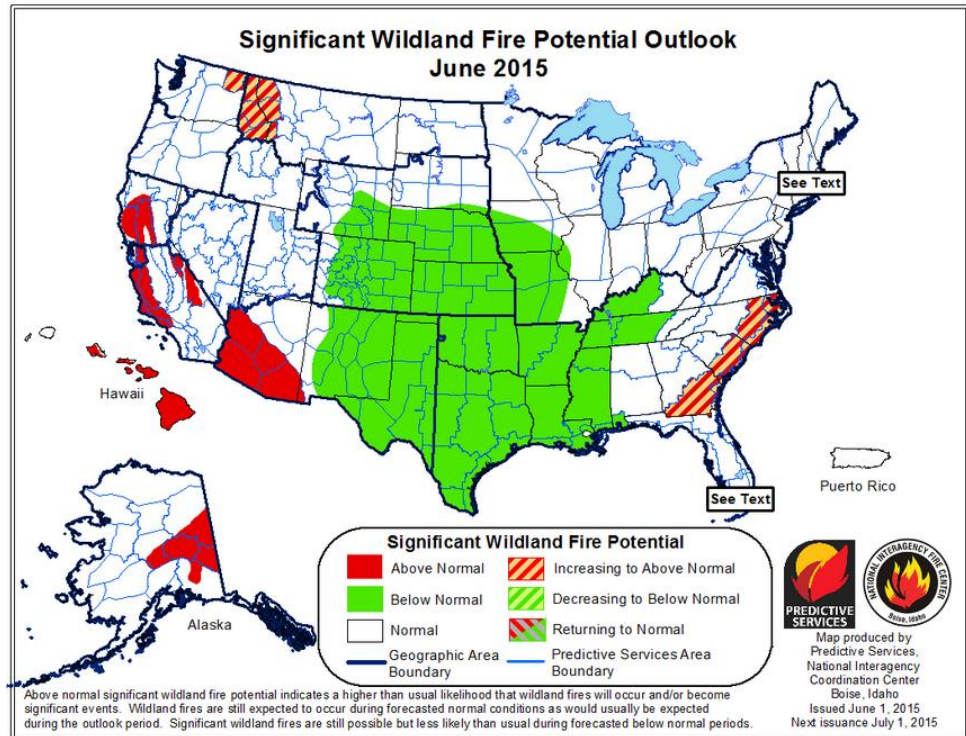




Southeastern Georgia and Coastal Georgia

Seasonal Outlook

Increasing to above normal significant fire potential for late June is expected along much of the Gulf Coast from the North Carolina-Virginia border to the south through the Coastal Plain into southwestern Georgia at the northern Florida boundary. Above normal significant fire potential is prevalent through July in the same Coastal Plain areas; however the significant fire potential deepens and covers the interior of North Carolina, nearly to the Tennessee border, the entire state of South Carolina, and two-thirds of Georgia to the Alabama border. A fairly wet winter/spring had alleviated significant fire potential however the past month has been generally dry across the assessment area and this drying is forecast to continue into July.



The majority of the northern and western geographic area have experienced moderated conditions through the winter/spring and early summer and the outlook reflects these conditions with a below normal fire potential outlook.

Predicted Fire Behavior

The majority of the assessment area is currently experiencing fairly normal conditions while trending to warmer and drier. The northern and western portions of the GACC are experiencing below normal fire conditions and are expected to maintain these conditions. As the Southern Area typically experiences a general end to the fire season by now, the intent of this assessment is not to focus on today but to focus on the upcoming weeks if fire weather and fire danger conditions continue to trend higher.

In order to generally describe fire behavior potential a historical comparison analysis has been completed within the Fuels and Fire Danger portion of this assessment. Finding of that analysis have shown that 2011 and 2015, in terms of fire danger indices, are reasonable matches. The 2011 season differed in that the winter and spring were much drier; overall however the majority of indices used to calculate fire danger and fire behavior are currently trending at consistently similar levels. It is observed that 2015 conditions throughout the assessment area are typically trending roughly **10 days behind those of 2011.**

Historic Fire Behavior Comparison Analysis

Carolina Coast

Combined, in 2011, the Juniper Road (NC, 31,000 Acres) and Hornet (SC) fires blackened a nearly 33,000 acres.

| FIRE_NAME | Discovery | Fire Size | 2011 PSA Indices | | | | | | | Current (06/16/2015) PSA Indices | | | | | | |
|--------------|-----------|-----------|------------------|--------|-----|-----|----|------------|-----------|----------------------------------|--------|-----|-----|----|------------|-----------|
| | | | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM |
| HORNET FIRE | 7/3/2011 | 1,155 | 91 | 49 | 31 | 592 | 29 | 17 | 16 | 101 | 37 | 26 | 371 | 17 | 20 | 15 |
| JUNIPER ROAD | 6/19/2011 | 31,140 | 95 | 41 | 35 | 637 | 36 | 16 | 15 | 100 | 37 | 23 | 325 | 21 | 22 | 16 |

The comparison table above displays indices observed on the date of each fires discovery in relation to those currently being experienced. When comparing years it is evident that 2015 is slightly below 2011 conditions however with trending warm and dry conditions prevailing for the next few weeks, similarly experienced fire behavior may be expected.



Juniper Road Fire – Photo NC Forest Service

Thus far there are no reported issues with duff and organic soils being consumed in North Carolina. However, South Carolina has reported instances where the duff and organics are starting to smolder and hold heat. Rainfall, though spotty in places, has been sufficient to limit the areas of concern. High to extreme burning conditions could potentially develop. In the Juniper Road Long Term Analysis, which was prepared on the 25th of June, 2011, local experts defined large fire growth days as having a minimum relative humidity of 38 percent or less, wind speed of 7 mph or

greater, maximum temperature of 77 or greater, and ERC of 38 or greater. All values together indicate warm, dry, windy conditions.

For the immediate future resources should be successful in initial attack operations however fire danger indices and fuels conditions should be continually monitored and evaluated. If conditions continue to align and trend higher, there could be instances in which local resources may require modifications in strategy and tactics as well as out of area



Pender County RX 6/18/15

assistance to assist in fire control efforts.

In 2011 the Simmons Road Fire blackened over 5,400 acres.

| FIRE_NAME | Discovery | Fire Size | 2011 PSA Indices | | | | | | | | Current (06/16/2015) PSA Indices | | | | | | | |
|--------------|-----------|-----------|------------------|--------|-----|-----|----|------------|-----------|--------|----------------------------------|-----|------|----|------------|-----------|--|--|
| | | | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM | Max Te | Min F | ERC | KBDI | BI | 1000-Hr FM | 100-Hr FM | | |
| SIMMONS ROAD | 6/19/2011 | 5,438 | 97 | 36 | 37 | 555 | 39 | 16 | 14 | 103 | 27 | 33 | 420 | 27 | 19 | 13 | | |

The comparison table above displays indices observed on the date of each fires discovery in relation to those currently being experienced. When comparing years it is evident that 2015 is trending closely to 2011 and with trending warm and dry conditions prevailing for the next few weeks, similarly experienced fire behavior should be expected.



The southern and eastern piedmont of North Carolina have received well below normal rainfall and are at or near critical NFDRS readings. Initial attack resources should currently observe success in the initial attack phase however as conditions and indices trend higher the potential for high to very high and extreme fire behavior may require changing tactics as well as out of area assistance. Strategies may change from typical direct attack tactics utilizing ground resources to combinations of in-direct attack and aerial resources.

Southeastern Georgia and Northern Florida

Mid-June, 2011 produced nine large wildfires in southeastern coastal Georgia and northeastern coastal Florida that burned nearly 50,000 combined acres.

| FIRE_NAME | Discovery | Fire Size | 2011 PSA Indices | | | | | | | | Current (06/16/2015) PSA Indices | | | | | | | |
|----------------------|-----------|-----------|------------------|--------|-----|-----|----|------------|-----------|--------|----------------------------------|-----|------|----|------------|-----------|--|--|
| | | | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM | Max Te | Min F | ERC | KBDI | BI | 1000-Hr FM | 100-Hr FM | | |
| IMPASSABLE BAY | 6/16/2011 | 11,025 | 102 | 26 | 33 | 681 | 28 | 16 | 16 | 99 | 34 | 33 | 575 | 25 | 17 | 16 | | |
| LIL LAKE GEORGE WILD | 6/18/2011 | 2,226 | 98 | 37 | 34 | 693 | 27 | 16 | 15 | 99 | 34 | 33 | 575 | 25 | 17 | 16 | | |
| CHARLTON-090 | 6/13/2011 | 1,202 | 100 | 25 | 44 | 645 | 41 | 14 | 13 | 99 | 35 | 28 | 466 | 21 | 19 | 15 | | |
| CHARLTON-092 | 6/14/2011 | 3,420 | 101 | 23 | 46 | 650 | 47 | 14 | 12 | 99 | 35 | 28 | 466 | 21 | 19 | 15 | | |
| CHARLTON-101 | 6/14/2011 | 1,400 | 101 | 23 | 46 | 650 | 47 | 14 | 12 | 99 | 35 | 28 | 466 | 21 | 19 | 15 | | |
| CLINCH-058 | 6/15/2011 | 3,703 | 99 | 25 | 45 | 657 | 40 | 14 | 12 | 99 | 35 | 28 | 466 | 21 | 19 | 15 | | |
| WAVERLY FIRE | 6/14/2011 | 1200 | 100 | 28 | 37 | 614 | 27 | 16 | 15 | 98 | 40 | 25 | 445 | 21 | 20 | 15 | | |
| SANTA FE 11 | 6/8/2011 | 5679 | 93 | 35 | 35 | 665 | 32 | 16 | 16 | 99 | 34 | 33 | 575 | 25 | 17 | 16 | | |
| Sweat Farm Again | 6/15/2011 | 19,198 | 99 | 25 | 45 | 657 | 40 | 14 | 12 | 99 | 35 | 28 | 466 | 21 | 19 | 15 | | |

Conditions in the Piedmont and southern half of Georgia are also trending just behind those of 2011. Fires are currently burning with moderate spread rates with torching and spotting. Wetland areas comprised of swamps and hardwood bays are drying quickly and fires are burning more intensely, especially along upland pine boundaries. The palmetto-gallberry in the southeastern portions of Georgia is exhibiting intense afternoon burning with flame lengths of 20 feet common. Most wildfires currently are holding over for several days and require more intense mop-up.

The Bay Hammock Fire was discovered on the 9th of June and consumed roughly 61 acres over the following week. This lightning caused fire has primarily moved through heavy palmetto with live oak overstory and continues to creep and smolder until winds increase and cause the fire run.

Current NFDRS conditions, at least within the Predictive Service Area (PSA) RAWS, appear to be lagging somewhat behind those of 2011. Resources currently should remain successful in initial attack operations. As these conditions trend higher over the course of the next few weeks, resources should use 2011 as a benchmark for fire behavior potential. Those fuels already susceptible to intense burning conditions will require modifications to suppression tactics and the potential exists for the utilization of combinations of aerial resources and out of area resource assistance in order to limit and/or control fire spread.

The table below is meant to simply highlight the PSA RAWS sites and those indices observed two weeks later, the 30th of June. As current conditions continue to trend higher, it is observed here that the potential exists for indices to trend towards 2011 values in the coming weeks.



to

on

| FIRE_NAME | Discovery | Fire Size | June 30, 2011 - PSA RAWS Indices | | | | | | | Current (06/16/2015) PSA Indices | | | | | | |
|----------------------|-----------|-----------|----------------------------------|--------|-----|-----|----|------------|-----------|----------------------------------|--------|-----|-----|----|------------|-----------|
| | | | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM |
| WAVERLY FIRE | 6/14/2011 | 1,200 | 92 | 54 | 26 | 434 | 17 | 18 | 18 | 98 | 40 | 25 | 445 | 21 | 20 | 16 |
| CHARLTON-090 | 6/13/2011 | 1,202 | 92 | 48 | 30 | 456 | 24 | 16 | 17 | 99 | 35 | 28 | 466 | 21 | 19 | 15 |
| CHARLTON-092 | 6/14/2011 | 3,420 | 92 | 48 | 30 | 456 | 24 | 16 | 17 | 99 | 35 | 28 | 466 | 21 | 19 | 15 |
| CHARLTON-101 | 6/14/2011 | 1,400 | 92 | 48 | 30 | 456 | 24 | 16 | 17 | 99 | 35 | 28 | 466 | 21 | 19 | 15 |
| CLINCH-058 | 6/15/2011 | 3,703 | 92 | 48 | 30 | 456 | 24 | 16 | 17 | 99 | 35 | 28 | 466 | 21 | 19 | 15 |
| Sweet Farm Again | 6/15/2011 | 19,198 | 92 | 48 | 30 | 456 | 24 | 16 | 17 | 99 | 35 | 28 | 466 | 21 | 19 | 15 |
| IMPASSABLE BAY | 6/16/2011 | 11,025 | 90 | 58 | 26 | 688 | 21 | 18 | 18 | 99 | 34 | 33 | 575 | 25 | 17 | 16 |
| LIL LAKE GEORGE WILD | 6/18/2011 | 2,226 | 90 | 58 | 26 | 688 | 21 | 18 | 18 | 99 | 34 | 33 | 575 | 25 | 17 | 16 |
| SANTA FE 11 | 6/8/2011 | 5679 | 90 | 58 | 26 | 688 | 21 | 18 | 18 | 99 | 34 | 33 | 575 | 25 | 17 | 16 |



Indices on the 21st of June, 2011, during the Honey Prairie Fire on the Okefenokee National Wildlife Refuge, were generally similar to those forecasted in the coming weeks. Honey Prairie indices on June 21st were: Max Temp 99, Min RH 33, ERC 41, KBDI 609, BI 31, 100-Hr FM 14, 1000-Hr FM 14.

Southeastern Coastal Florida

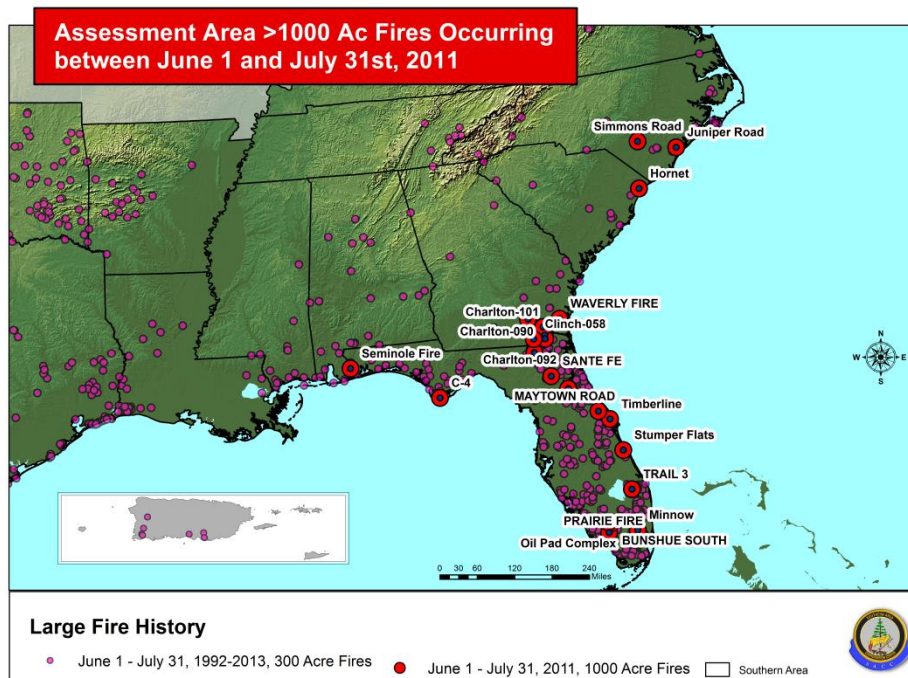
ERCs currently range in the upper 70th percentile. As ERCs trend higher, fire managers should expect fires to move through areas such as swamps that would normally stop or slow fire spread. As observed during historic years, fuels traditionally modeled as Fuel model 8 will likely burn with greater intensity and will need to be modeled as a fuel model 9 or 10 to accurately depict fire spread and flame lengths.

| FIRE_NAME | Discovery | Fire Size | 2011 PSA Indices | | | | | | | Current (06/16/2015) PSA Indices | | | | | | |
|-----------------|-----------|-----------|------------------|--------|-----|-----|----|------------|-----------|----------------------------------|-------|-----|------|----|------------|-----------|
| | | | Max Temp | Min RH | ERC | KBD | BI | 1000-Hr FM | 100-Hr FM | Max Te | Min F | ERC | KBDI | BI | 1000-Hr FM | 100-Hr FM |
| STUMPER FLATS | 7/29/2011 | 1,300 | 92 | 53 | 18 | 465 | 12 | 19 | 20 | 95 | 16 | 29 | 481 | 22 | 19 | 14 |
| MINNOW | 7/27/2011 | 1,200 | 93 | 59 | 17 | 438 | 24 | 22 | 18 | 93 | 52 | 20 | 403 | 27 | 21 | 18 |
| TRAIL 3 | 6/3/2011 | 7,000 | 93 | 39 | 28 | 639 | 30 | 19 | 16 | 92 | 53 | 8 | 294 | 8 | 28 | 24 |
| OIL PAD COMPLEX | 6/13/2011 | 3,149 | 98 | 40 | 28 | 659 | 21 | 18 | 17 | 92 | 53 | 8 | 294 | 8 | 28 | 24 |
| BUNSHU SOUTH | 6/13/2011 | 1,408 | 98 | 40 | 28 | 659 | 21 | 18 | 17 | 92 | 53 | 8 | 294 | 8 | 28 | 24 |
| DOF PRARIE FIRE | 6/6/2011 | 68,295 | 93 | 45 | 28 | 715 | 26 | 18 | 16 | 93 | 52 | 20 | 403 | 27 | 21 | 18 |

Many fires will likely exhibit high rates of spread along with short and long range spotting. Active burning during the night will decline as humidity recovers with nocturnal cooling. Due to deep burning conditions, mop up times will likely be longer and fires will need to be checked for multiple days before being declared out. All these conditions lead to more resources being needed for fire suppression for both initial and extended attack.

Northern and Western Portions of the GACC

Low fire activity and behavior is expected in both the northern and western reaches of the geographic area during the next month. Significant rainfall along with a persistent moderation in fire danger conditions should minimize fire potential during the summer months. Units bordering the assessment analysis area should continue to monitor fuels conditions and fire danger indices through the summer however as deepening drought conditions could impact these areas.



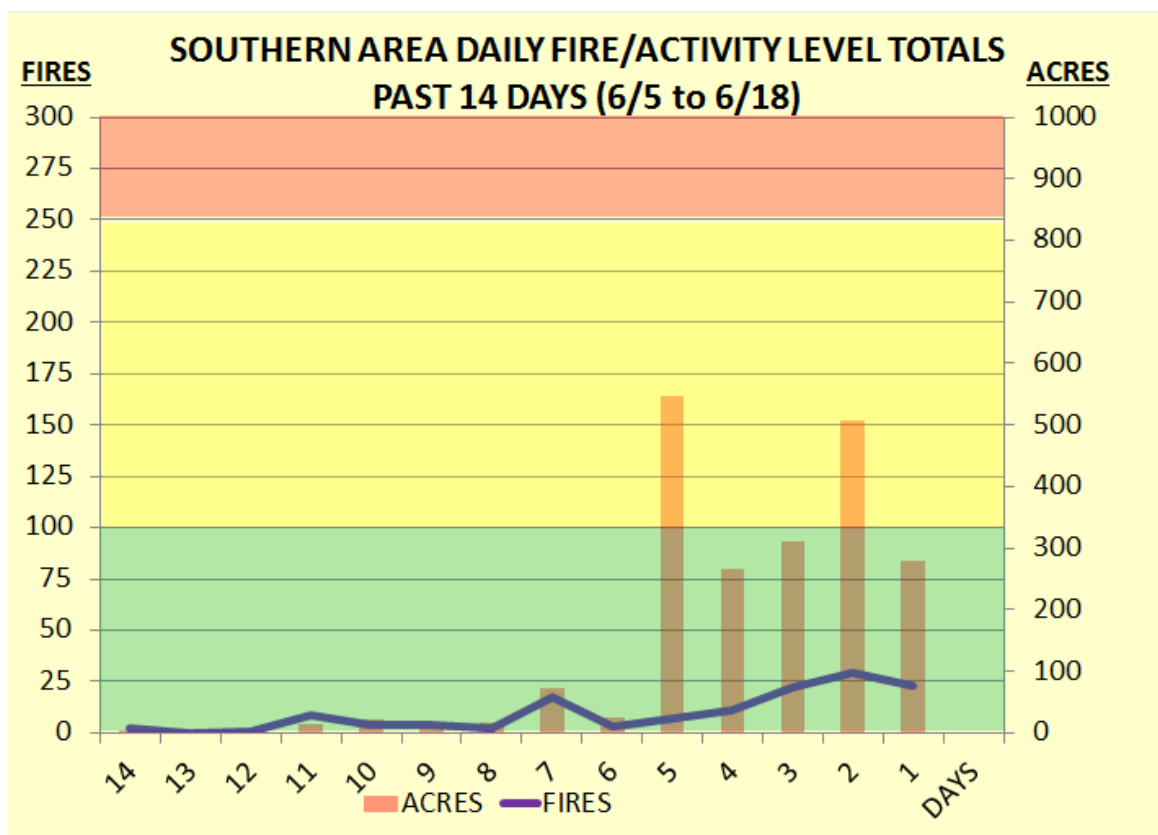
Fire behavior recommendations

- Units within the Southern Area should consider utilizing and updating the National Fuels Moisture Database. This data is extremely valuable and helps highlight and track local conditions.
- As conditions warrant, utilize SACC Decision Support Center.
- Resources should remain cognizant of current conditions while monitoring and evaluating potential trends in increasing fire danger.
- Ensure daily briefings communicate daily fire danger and fuels conditions.

Fire Occurrence

Due to frequent rainfall in the winter and spring, fire occurrence has been generally below to well below normal for 2015 across the Southern Area and in the primary states of concern. There has however been an increase in initial attack activity recently and an uptick in new large fires in the past week. If an overall hot and dry trend persists as forecasted, fire managers can expect to see higher occurrence and large fire growth particularly on days where underlying fire danger lines up with critical fire weather conditions.

| State | Number of Fires (YTD) | Number of Acres (YTD) |
|-------|-----------------------|-----------------------|
| FL | 1516 | 70399 |
| GA | 1606 | 7707 |
| NC | 2739 | 10505 |
| SC | 838 | 4539 |



Generally in this area, fire occurrence wanes by mid-May to mid-June. However, in some recent years there have been significant fires that started in June and July. Shown below are fires greater than 1000 acres that were discovered between June 15 and July 31 in NC, SC, GA and FL since 2008.

(Data from WFDSS- Final acreage may be slightly inaccurate)

| Incident Name | Unique Fire Identifier | Final Size (ac) | Discovery |
|--------------------------------------|-------------------------------|------------------------|------------------|
| Carolina Bay | 2009-NCNCF-090079 | 2660 | 07/23/2009 |
| 2A North | 2009-FLLXR-000006 | 2600 | 06/18/2009 |
| 2A South | 2009-FLLXR-000005 | 2000 | 06/18/2009 |
| Coyote | 2010-FLMIR-000002 | 1697 | 07/25/2010 |
| Pepper | 2010-FLMIR-000051 | 1500 | 07/15/2010 |
| Salt Springs 16 | 2010-FLFNF-002068 | 1221 | 06/28/2010 |
| Timberline | 2011-FLMIR-201154 | 2800 | 07/14/2011 |
| Hornet | 2011-SCSCS-000001 | 1231 | 07/03/2011 |
| Simmons Rd Fire | 2011-NCNCS-011949 | 5438 | 06/20/2011 |
| Juniper Road | 2011-NCNCS-071048 | 30162 | 06/19/2011 |
| Little Lake George Wilderness | 2011-FLFNF-002138 | 2035 | 06/18/2011 |
| GA-19-Sawfly Rd | 2011-GAOKR-011020 | 27097 | 06/15/2011 |
| Brown House | 2012-FLFNF-006104 | 1356 | 07/09/2012 |
| WAH Fire | 2012-FLLWR-201236 | 1418 | 07/06/2012 |
| Snake Road Fire | 2012-FLMIA-000017 | 2486 | 07/04/2012 |
| Deer Hammock | 2012-FLEVP-120089 | 2100 | 07/03/2012 |
| Dad Fire | 2012-NCNCF-120072 | 21331 | 06/16/2012 |
| Southside MM | 2014-FLFLS-2014180196 | 1000 | 07/13/2014 |
| Rodgers River | 2014-FLEVP-140047 | 3500 | 07/09/2014 |
| Macks Camp South | 2014-FLFLS-2014-18-01 | 8000 | 06/27/2014 |
| Macks Camp North | 2014-FLFLS-2014180186 | 3000 | 06/27/2014 |
| The Nicki Fire | 2014-GAOKR-014001 | 1021 | 06/18/2014 |
| St. Johns/Three Forks | 2014-FLFLS-2014120343 | 1000 | 06/16/2014 |
| Carolina Bay | 2009-NCNCF-090079 | 2660 | 07/23/2009 |

Summary

Findings

- It will take a return to the normal tropical/monsoonal flow of moisture before the fire season will end.
- Fire managers should continue to stay vigilant on fuel conditions coupled with daily fire weather forecasts.
- An increased frequency of rain events coupled with more normal humidity levels will mitigate the fuel dryness.
- Daily low RH values in the drier areas will result in continued high fire danger even with some precipitation unless rainfall returns to normal or above normal levels
- The timing of precipitation (frequency) is critical to staying out of a extended fire season. These events need to take place on a 5 to 7 day cycle.
- The short term and long term forecasts indicates a continuation of a relatively moist pattern for areas west of the Mississippi river.

Conclusions

Worst Case Scenario

Probability – 10%

Short term drought deepens and extends into the eastern portions of the southern Appalachians to include all of North Carolina, South Carolina, northeastern Florida and Georgia. Rainfall frequency and amounts are little and the normal tropical moisture pattern does not develop. No relief in the form of tropical storms is received. These areas experience a well above average summer fire season, including numerous extended attack (type III or II) fires.

Most Likely Scenario

Probability – 70%

The late spring/early summer fire season extends deeper into summer than normal due to the short term drought and current weather pattern. An above normal amount of initial attack activity is experienced for this time of the year. Organic soils begin to burn as bays and swamps begin to lose moisture. Firefighting resources that can normally be sent to support western fire season are held back to support local initial attack needs. Additional aviation assets are required due to fire behavior. Several type III incidents occur at the same time in the geographic area. However, no large scale mobilization is required due to at least some mitigating weather pattern (high humidity or periodic rainfall).

Best Case Scenario

Probability – 20%

Normal tropical/monsoonal pattern develops for the coastal and piedmont areas. This brings frequent rainfall events and enough moisture to erase rainfall deficits. The normal summer time wildfire occurrence develops. Very light to no initial attack is experienced.

Recommendations

- Maintain capabilities to mobilize type III teams
- Augmentation of initial attack resources will likely be required over the next few weeks. This will result from increased wildfire occurrence and longer mop up times due to organic soils becoming involved.
- Additional aviation assets may be needed.
- Managers will want to carefully balance supporting suppression efforts out west and initial attack needs on home unit.
- Ensure firefighter pocket cards are up to date and posted on the national website.
<http://fam.nwcg.gov/fam-web/pocketcards/>
- Fire managers must consider potential extreme fire behavior, which can be expected when fire danger indices exceed the 97th percentile. Tactics should be altered to provide for firefighter and public safety. Appropriate Management Response may be point protection rather than direct attack.
- Fire managers will have to take action to prevent/mitigate heat related illness in firefighting personnel due to the high heat index.
- Maintain national standardized predictive services products in a timely fashion. Produce new products as requested.

Southern Area Fire Risk Analysis Team Members

| | |
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